

**STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

STAFF REPORT FOR REGULAR MEETING OF MARCH 15, 2012
Prepared February 16, 2012

ITEM NUMBER: 11

SUBJECT: Recommended Case Closures

Background:

This staff report provides summaries of recommended case closures for two Underground Storage Tank (UST) sites. For these sites, soil and/or groundwater beneath the sites has not attained water quality or soil cleanup goals for one or more constituents. Central Coast Water Board staff's closure recommendation is premised on the knowledge that: 1) the remaining constituent concentrations are sufficiently low so as to not pose a threat to surrounding existing beneficial uses of the water (e.g., supply wells, surface waters, etc.); 2) the constituent sources have been removed; 3) monitoring has indicated that the groundwater plumes are contracting in size and concentration; and 4) continued monitoring at these sites would not provide additional benefit for the staff resources invested. These sites are appropriate for closure, based on the site-specific information provided below for each of these cases.

UNDERGROUND STORAGE TANK CASE CLOSURES

UNOCAL 76 Service Station No. 25-2411, 1441 Spring Street, Paso Robles, San Luis Obispo [Corey Walsh (805) 542-4781]

Central Coast Water Board staff recommends closure of this UST case where groundwater sample results indicate total petroleum hydrocarbons as gasoline (TPH-g), benzene and naphthalene contamination remains in groundwater at concentrations slightly greater than the Central Coast Water Board's cleanup goal. The second quarter 2011 groundwater monitoring results show TPH-g, benzene, and naphthalene in one on-site monitoring well at 1,100 micrograms per liter ($\mu\text{g/L}$), 1.9 $\mu\text{g/L}$, and 27 $\mu\text{g/L}$, respectively (see Figure 1). Tetrachloroethene (PCE) was also detected greater than cleanup goals in both on-site and off-site wells. PCE is present in two wells at a range of 0.53 $\mu\text{g/L}$ to 17 $\mu\text{g/L}$. PCE is not a common constituent of gasoline or fuel oxygenates and staff attributes its presence to an off-site source. Underground Tank program staff has reported the PCE detection to Site Cleanup Program staff. The Central Coast Water Board cleanup goals for TPH-g, benzene, naphthalene, and PCE are 1,000 $\mu\text{g/L}$, 1.0 $\mu\text{g/L}$, 17 $\mu\text{g/L}$, and 5 $\mu\text{g/L}$, respectively. Other common groundwater contaminants associated with gasoline and fuel oxygenates were either not detected or were detected at concentrations below their respective cleanup goals.

Consultants discovered the release during an environmental investigation completed in February, 2005 on behalf of ConocoPhillips Company (Conoco) in preparation for sale of the subject property. Conoco recently transferred management and responsibility to investigate and cleanup the site to Chevron Environmental Management Company (EMC). The site is an active service station located on the southwest corner of the intersection of 15th Street and Spring Street in Paso Robles. The current property and station owner is Mr. Elsayed M. Elsayed.

During May 2009, the responsible party conducted groundwater remediation with the injection of Oxygen Releasing Compound (ORC) and RegenOx™ slurry into nine injection points surrounding well MW-3. The slurry was injected again in February 2010, using three injection points in the vicinity of well MW-5, and directly into well MW-5. The RegenOx™/ORC slurry was injected between a target depth of 28 feet below ground surface (bgs) and approximately 16 feet bgs to enhance biodegradation of petroleum hydrocarbons. During the course of the post-remediation confirmation monitoring, hydrocarbon concentrations have declined to below or near their respective cleanup goals and concentrations exceeding the cleanup goals are limited to a small area on-site.

Two irrigation wells and three domestic wells are located within a one-mile radius of the subject property, and these wells are either cross-gradient, or upgradient from the facility. The residual petroleum hydrocarbons remaining are unlikely to affect these wells or surface waters considering groundwater flow direction, area geology, well distances, screen depths, low remaining contaminant concentrations, and the localized extent of the contamination. Depth to groundwater at the site was measured between approximately 14 and 15 feet bgs and flows toward the east. The groundwater flow direction has been variable toward the east, northeast, and southeast.

Central Coast Water Board staff recommends closure of this case based on the following:

1. The extent of the release has been adequately characterized;
2. The plume is localized in a small area in the vicinity of well MW-5, and the detected maximum concentrations of TPH-g, benzene and naphthalene are only slightly above the respective cleanup goals;
3. Groundwater data indicate that on-site remediation was effective and has significantly reduced concentrations of pollutants in groundwater. Groundwater monitoring shows decreasing concentration trends for the compounds above their respective cleanup goals. Central Coast Water Board staff expect the remaining constituents of concern will continue to attenuate naturally beneath this active gas station; and
4. Case closure is consistent with State Board Resolution No. 92-49, Section III.G., which allows consideration of cost-effective abatement measures where attainment of reasonable objectives, less stringent than background water quality, does not unreasonably affect present or anticipated beneficial uses of groundwater, and will not result in water quality less than that prescribed by the Basin Plan.

Residual soil and groundwater contamination still exists on-site that could pose an unacceptable risk under certain site redevelopment activities such as site grading, excavation, or de-watering. The Central Coast Water Board, San Luis Obispo County Environmental Health Services (EHS), and the appropriate local planning and building departments must be notified prior to any changes in land use, grading activities, soil excavation, or groundwater dewatering at this site. This notification must include a statement that residual soil and groundwater contamination underlie the property and nearby properties, and a description of the mitigation actions necessary (if any) to ensure that any possibly contaminated soils or groundwater brought to the surface by these activities are managed appropriately. Future site disturbance could require worker health and safety protection, and restrictions on the disposal of soil and groundwater. San Luis Obispo County EHS may require additional site assessment if the property is proposed to be redeveloped. Additional actions required by the EHS may include, but are not limited to, a case review, further remedial action, soil gas analysis, and a human health risk assessment.

Based on the above, there is no longer a threat to groundwater quality and no further groundwater investigation or cleanup is necessary. San Luis Obispo County Environmental Health Department staff agrees with this determination. Central Coast Water Board staff notified the responsible party, the property owner, and other interested parties of this proposed case closure. We have not received any comments on the proposed closure of this case. Unless the Central Coast Water Board objects and pending proper monitoring well destruction, the Executive Officer will issue a formal case closure letter.

Attachment 1 – Benzene Isoconcentration Contour Map

ARCO AM/PM Service Station, 890 4th Street, Pismo Beach, San Luis Obispo County
[Corey Walsh (805) 542-4781]

Central Coast Water Board staff recommends closure of this UST case where groundwater sample results show benzene, MTBE, and 1,2-dichloroethane (1,2-DCA) concentrations remain greater than Central Coast Water Board cleanup goals. Groundwater analytical results from the August 4, 2011 sampling event indicate contaminant levels range for benzene from 0.08 micrograms per liter ($\mu\text{g/L}$) to 240 $\mu\text{g/L}$, MTBE from 1.3 $\mu\text{g/L}$ to 39 $\mu\text{g/L}$, and 1,2-DCA from 0.62 $\mu\text{g/L}$ to 2.1 $\mu\text{g/L}$ (see Figure 2). The Water Board's cleanup goals for benzene, MTBE, and 1,2-DCA are 1 $\mu\text{g/L}$, 5 $\mu\text{g/L}$, and 0.5 $\mu\text{g/L}$, respectively. Other common groundwater contaminants associated with gasoline and fuel oxygenates were either not detected or were detected at concentrations below their respective cleanup goals.

This active service station is located at the intersection of 4th Street and Five Cities Drive in Pismo Beach. The property is bounded by 4th Street to the west and northwest, Five Cities Drive to the north and northeast, Denny's Restaurant to the southeast, and a Motel 6 to the south. Land use in this area is zoned general commercial. The retail service station is operated by the current owner. The former owner and operator is the responsible party for cleanup of the site. In May 2002, during an investigation of an adjacent UST cleanup site at 591 Five Cities Drive (Desert Petroleum property, to the northwest), evidence indicated the subject site (ARCO AM/PM) was also responsible for a release of petroleum hydrocarbons. Subsequent soil samples showed hydrocarbon-contaminated soil adjacent to the current USTs, piping, and service islands. Laboratory analytical test results confirmed the presence of benzene and MTBE in concentrations above the Central Coast Water Board cleanup goals for soil.

In October 2008, consultants completed the installation of a Soil Vapor Extraction (SVE) system using four vapor extraction wells. The SVE system operated during 2008 and 2009, and was temporarily shut off to evaluate potential rebound of subsurface vapor concentrations in late 2009. In February 2010, the SVE system was restarted and vapor samples were collected and analyzed to evaluate the rate of vapor-phase contaminant removal. The results of the SVE system rebound test indicated a rebound of vapor-phase petroleum hydrocarbons at the site. However, elevated petroleum hydrocarbon vapors encountered during the restart of the SVE system were concluded to be due to the volatilization of gasoline contaminants from the adjacent Desert Petroleum property's groundwater plume which has migrated to the western portion of the ARCO AM/PM site. The estimated total mass of petroleum hydrocarbons removed during operation of the SVE system is 7,786 pounds.

Three inactive municipal water supply wells are located within a one-half mile radius of the site. All three belong to the Pismo Beach Water Department and are not currently operational. The closest well is Well 10; an inactive well that is located approximately 180 feet northwest

(upgradient) of the site. The Pismo Lake Ecological Reserve is located approximately 1,000 feet south of the site. The residual petroleum hydrocarbons are unlikely to affect these wells or surface waters considering the southerly groundwater flow direction, local area geology, well construction, low remaining contaminant concentrations, and the localized extent of the remaining contamination. Any associated risks are expected to decrease with time. Depth to groundwater is approximately 25 feet below ground surface.

Our recommendation for closure is based on the following:

1. The extent of the release has been adequately characterized;
2. The soil contaminant source was removed from the site, to the extent practical,
3. Based on the historical presence of free-floating product from the adjacent Desert Petroleum property, the remaining elevated contaminant concentrations identified in groundwater at the subject site are likely the result of lateral migration of dissolved-phase contaminants from the adjacent site. Remediation at the adjacent Desert Petroleum site is ongoing;
4. The on-site groundwater plume is declining in size and concentration;
5. Groundwater data indicate that on-site remediation was effective and has significantly reduced concentrations of pollutants;
6. Monitoring data indicate favorable conditions for natural attenuation of remaining petroleum hydrocarbons and concentrations associated with this release are expected to continue to decrease with time; and
7. Closure is consistent with Section III.G. State Board Resolution No. 92-49, allowing consideration of cost effective abatement measures for a site where attainment of reasonable objectives less stringent than background water quality does not unreasonably affect present or anticipated beneficial uses of groundwater.

Residual soil and groundwater contamination still exists on-site that could pose an unacceptable risk under certain site redevelopment activities such as site grading, excavation, or de-watering. The Central Coast Water Board, San Luis Obispo County Environmental Health Services (EHS), and the appropriate local planning, and building departments must be notified prior to any changes in land use, grading activities, soil excavation, or groundwater dewatering. This notification must include a statement that residual soil and groundwater contamination underlie the property and nearby properties, and a description of the mitigation actions necessary (if any) to ensure that any possibly contaminated soils or groundwater brought to the surface by these activities are managed appropriately. Future site disturbance could require worker health and safety protection, and restrictions on the disposal of soil and groundwater. San Luis Obispo County EHS may require additional site assessment if the property is proposed to be redeveloped. Additional actions required by the EHS may include, but are not limited to, a case review, further remedial action, soil gas analysis, and a human health risk assessment.

Based on the above, there is no longer a threat to groundwater quality and no further groundwater investigation or cleanup is necessary. The San Luis Obispo County EHS staff agrees with this determination. Central Coast Water Board staff notified the responsible party, the property owner, and other interested parties of this proposed case closure. The responsible party for the adjacent Desert Petroleum UST cleanup case submitted comments which included opinions that several statements made in the ARCO AM/PM responsible party's request for case closure were largely unsubstantiated (regarding the migration of contaminants from up-gradient). However, Desert Petroleum's responsible party did not object to case closure for the ARCO AM/PM site. Central Coast Water Board staff evaluated the comments from the Desert Petroleum cleanup site's responsible party and concluded that closure of the ARCO AM/PM site

is appropriate. No other comments were received. Unless the Central Coast Water Board objects and pending proper monitoring well destruction, the Executive Officer will issue a formal case closure letter pursuant to California Underground Storage Tank Regulations.

Attachment 2: Benzene Concentration Map

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